



Central (Richmond)



Northern (Manassas)



Eastern (Norfolk)



Western (Roanoke)

DEPARTMENT OF FORENSIC SCIENCE UPDATE

Linda C. Jackson, Director

Presented to the Forensic Science Board

January 5, 2022



Strategic Planning

MISSION

The mission of the Department of Forensic Science is to provide laboratory services in criminal matters in the Commonwealth of Virginia, support the criminal justice system with quality and timely services, and advance the understanding of forensic science in order to promote public safety.

VALUES

Quality

Integrity

Impartiality

Diversity

Resilience

VISION

Providing unbiased support of the criminal justice system by leading in the field of forensic science

Agency Updates & Statistics



Staffing Updates

- Retirements
 - Chief Deputy Director Katya Herndon
 - Central Laboratory Director Jeff Ban
- Transfers
 - Northern Laboratory Director Scott Maye has transferred to the Central Laboratory Director position
- Appointments
 - Governor-Elect Youngkin reappointed Director Linda Jackson, whose 6-year term ends in December 2023



Central Laboratory Capital Project

- Construction funding for the project is approved
- Construction (working) drawings submitted for approval by DEB
- Construction Manager (Skanska) gathering information to support submission of their Guaranteed Maximum Price (GMP)
- Groundbreaking/Site preparation currently anticipated in late first quarter of 2022
- Project completion anticipated 2024/2025



Accreditation

- Awarded new accreditation services contract on December 20, 2021 to ANAB
 - Invitation for Bids process
- Current accreditation expires September 30, 2022
 - Onsite in May or early June





Audits and Reviews

- In Process
 - Office of the State Inspector General Audit to identify areas of potential improvements to effectiveness, efficiency and economy of operations
- Completed
 - Agency Risk Management and Internal Control Standards (ARMICS)



Enhance External Communication

- Refresh the DFS website
 - Update to current standards for accessibility
 - Increase flexibility for viewing on mobile devices
- Re-establish the Customer Working Group (CWG)
 - Seek feedback from customers on evidence submission policies and services provided



Policy Initiatives

One Virginia Plan – Diversity, Equity & Inclusion (DEI)

- Submitted revised DEI Strategic Plan and associated dashboard on December 14, 2021
- Included DEI language in Employee Work Profiles
- Completed DHRM Road to Cultural Competence training in December
- Goal: Create Virtual Laboratory Tour videos



Policy Initiatives

EO77 – Reduction of Solid Waste and Single Use Plastics

- Submitted revised spreadsheet to DEQ on December 17, 2021
- Medical exemption utilized
- Disposable laboratory consumables are utilized to significantly reduce the potential for cross contamination between samples and are used within validated methods

DNA Policy Notice

- Implementation of additional probabilistic genotyping software
- Used in the interpretation of complex DNA mixtures
- Performed in all laboratories on 2- to 3-person mixtures in “non-persons cases”

<https://www.dfs.virginia.gov/documentation-publications/dfs-policy-notices/>




COMMONWEALTH of VIRGINIA

DEPARTMENT OF FORENSIC SCIENCE

OFFICE OF THE DIRECTOR
A Nationally Accredited Laboratory

700 NORTH 5TH STREET
RICHMOND, VIRGINIA 23219
(804) 786-2281 FAX (804) 786-6857

NOTICE OF DFS POLICY CHANGE

To: All Agencies Served by DFS
From: Linda C. Jackson, Director 
Date: December 27, 2021
RE: STRmix™ Statistical Capabilities for DNA Mixtures

The Virginia Department of Forensic Science is pleased to announce that it has expanded its probabilistic genotyping capabilities by instituting the use of STRmix™ at all four regional laboratories. STRmix™ is a probabilistic genotyping software (PGS), developed by New Zealand's Institute of Environmental Science and Research (ESR) and Australia's Forensic Science South Australia (FSSA), that is used by forensic scientists in the interpretation of complex DNA mixtures.

STRmix™ has been extensively validated and is utilized in casework interpretation in many laboratories around the world and across the United States. The Department performed its own internal validation of STRmix™ in accordance with the FBI Quality Assurance Standards (QAS) for Validations, which was reviewed by the Department's advisory board, the Scientific Advisory Committee (SAC) and its Forensic Biology Subcommittee at meetings held in October 2021. Copies of the internal validation summary may be obtained from the Department by any interested parties. The Department's STRmix™ System Procedures Manual (document number 210-D2021) is available on the [DFS website](#).

DNA examiners in each laboratory are trained in the use of STRmix™. They will use STRmix™ when they have identified two- to three-person mixtures in “non-persons cases” (e.g., larcenies and felons in possession of firearms) that meet defined criteria. Its use will be noted on the Certificate of Analysis in the “Statistical Analysis Methods” section. The results, including any conclusions drawn and statistics calculated will be in the “Results and Interpretations” section of the report.

As it has since 2014, the Department will continue to utilize the TrueAllele® Casework System for “persons cases” (e.g., homicides, sexual assaults, malicious wounding) and any “non-persons cases” that do not meet the defined criteria for STRmix™.



Laboratory Information Management System (LIMS) Projects

- DNA Data Bank Sample Tracking System
 - Beta testing beginning
- Prelog for evidence submission information
- No Update
 - Expungement Module
 - Power BI for data presentation

Forensic Training for Attorneys and Judges



- Controlled Substances Analysis in Fall 2021
- No registration fee and no CLE credits
- Half day, virtual sessions with pre-recorded presentations and live question and answer periods
 - Two sessions: October 1 and November 12
 - Approximately 120 participants
- Spring 2022 – Future offering, in-person?



Forensic Training

- 104th FSA graduated on November 11, 2021
- 105th FSA begins January 31, 2022
- 106th FSA begins April 25, 2022

- Homicide Scene Seminar postponed until Spring





Supervisory Training

- All supervisors and managers attended the virtual training *Performance Management* on November 4, 2021
- Provided by Karen Michael, Esq.

Board of Pharmacy - Expedited Scheduling



DFS recommended five (5) compounds in October 2021. The compounds were considered at the Board's December 7th meeting and are pending final approval.

Synthetic Opioid:

- AP-238

Hallucinogenic Properties:

- Methallylescaline
- Alpha-D2PV

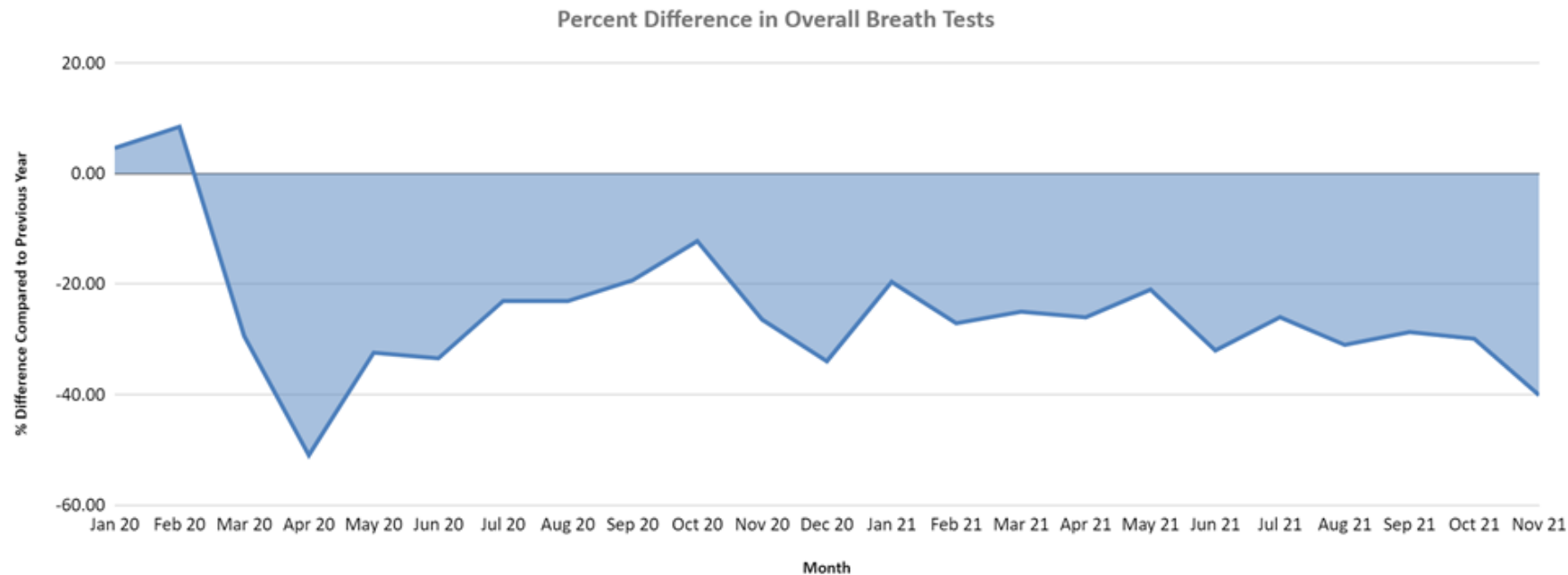
Cannabimimetic Agents:

- EDMB-PINACA
- ADB-PHETINACA



Breath Alcohol Testing

- The number of breath tests performed in the field continues to be lower than in 2019





Breath Alcohol Training

- The number of trained operators is slightly lower than in 2018 and 2019
 - Reduced class capacity (max of 15 students)
 - Absences due to COVID protocols

	2021	2020	2019	2018
Basic	666	504	761	767
Recertification	1282	1339	2031	2568
Online	1204	1350	903	363



November Workload Statistics

Section	Ending Backlog As of 11/30/2021	Average TAT (in days) November 2021
Controlled Substances	1157	19
Digital & Multimedia Evidence	73	100
Firearms & Toolmarks	2433	129
Forensic Biology (DNA)	1934	109
Latent Prints & Impressions	368	79
Toxicology	1270	54
Trace Evidence	144	88

NOTE:

December
2021 statistics
have not been
finalized.



Workload Statistics

DFS Workload Statistics	Case Submissions			Difference FY19/FY21
	FY19	FY20	FY21	
Controlled Substances	34,787	33,757	27,111	-22%
Digital & Multimedia Evidence	233	119	178	-24%
Firearms & Toolmarks	6,627	7,202	8,169	+23%
Forensic Biology	6,027	5,988	6,430	+7%
Latent Prints & Impressions	2,558	2,581	2,196	-14%
Toxicology	9,669	10,047	11,384	+18%
Trace Evidence	714	679	714	0%
Total	60,615	60,373	56,182	-7%



Physical Evidence – Firearms & Toolmarks

- 4 Forensic Scientist (FS) positions in training, 1 previously qualified FS starting in January, and 2 FS Trainees in the hiring process
- Additional microscopes have been ordered for the 3 FS positions that were transferred from Controlled Substances
- Lengthy training period
 - FS NIBIN - 6 months
 - FS Firearms - 18 months
 - FS Firearms & Toolmarks - 24 months



Cannabis Update

- Semi-Quantitative method expansion underway
 - Since December 2020, semi-quant method (1% Δ 9-THC) has included cannabis extracts in addition to plant material
 - Expansion will include evaluation for other tetrahydrocannabinols: Δ 8-THC, Δ 10-THC, and Δ 6a,10a-THC
 - Administrative threshold will remain at 1%
 - Not applicable to edibles or residues
 - On track for July 2022 completion



Supply Shortages

- Physical Evidence Recovery Kits (PERKs)
- Instrument service/maintenance



Toxicology

- Central and Western Toxicology rebuilding capacity
 - As of January 10, there will be six trainees in Western and four in Central
- MOU with OCME to outsource cases directly to private laboratory, particularly Central and Western Districts



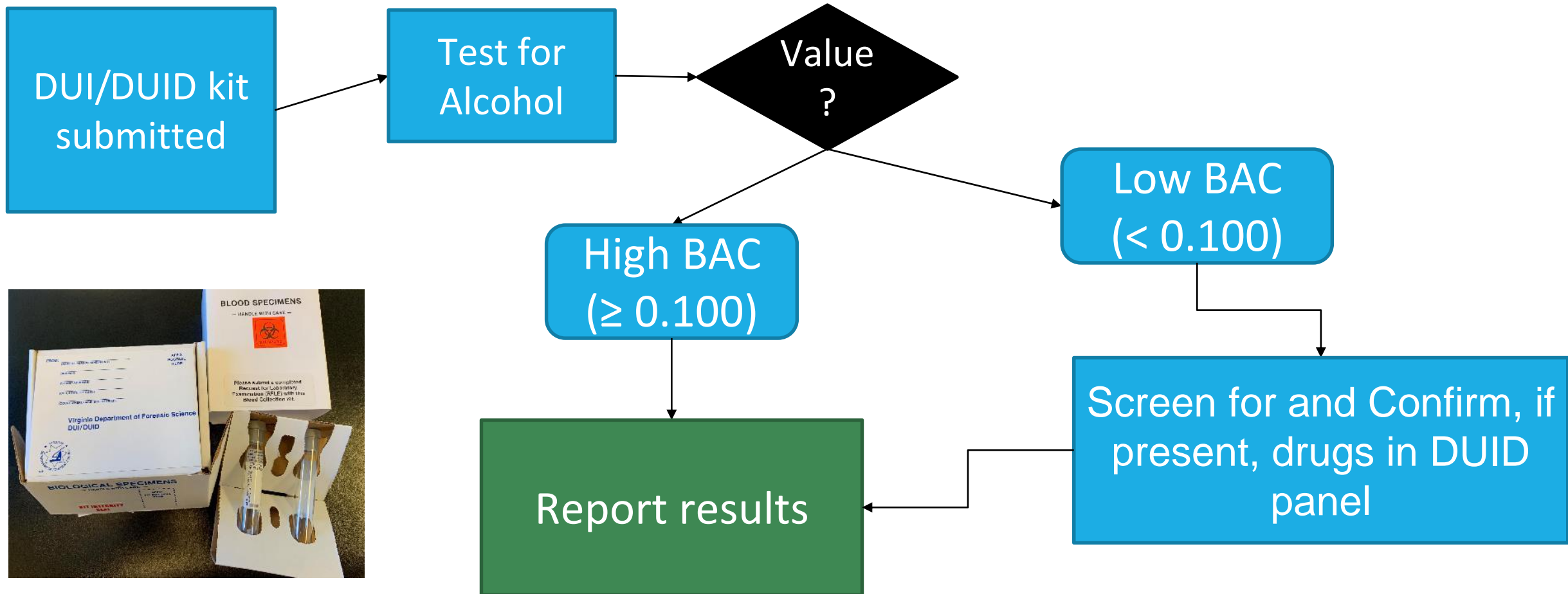
Toxicology Submissions by Exam Type

	2020 (January – June)	2021 (January – June)	Difference 2021 to 2020
OCME	2253	2828	+25%
DUID	1452	1511	+4%
DUI	1258	1506	+19%
Other	377	358	-5%

NOTE:
OCME Submissions do not account for cases outsourced directly from OCME. Therefore, DFS would have received approximately 360 additional cases in 2021 if not for the outsourcing agreement.



DUI vs. DUID

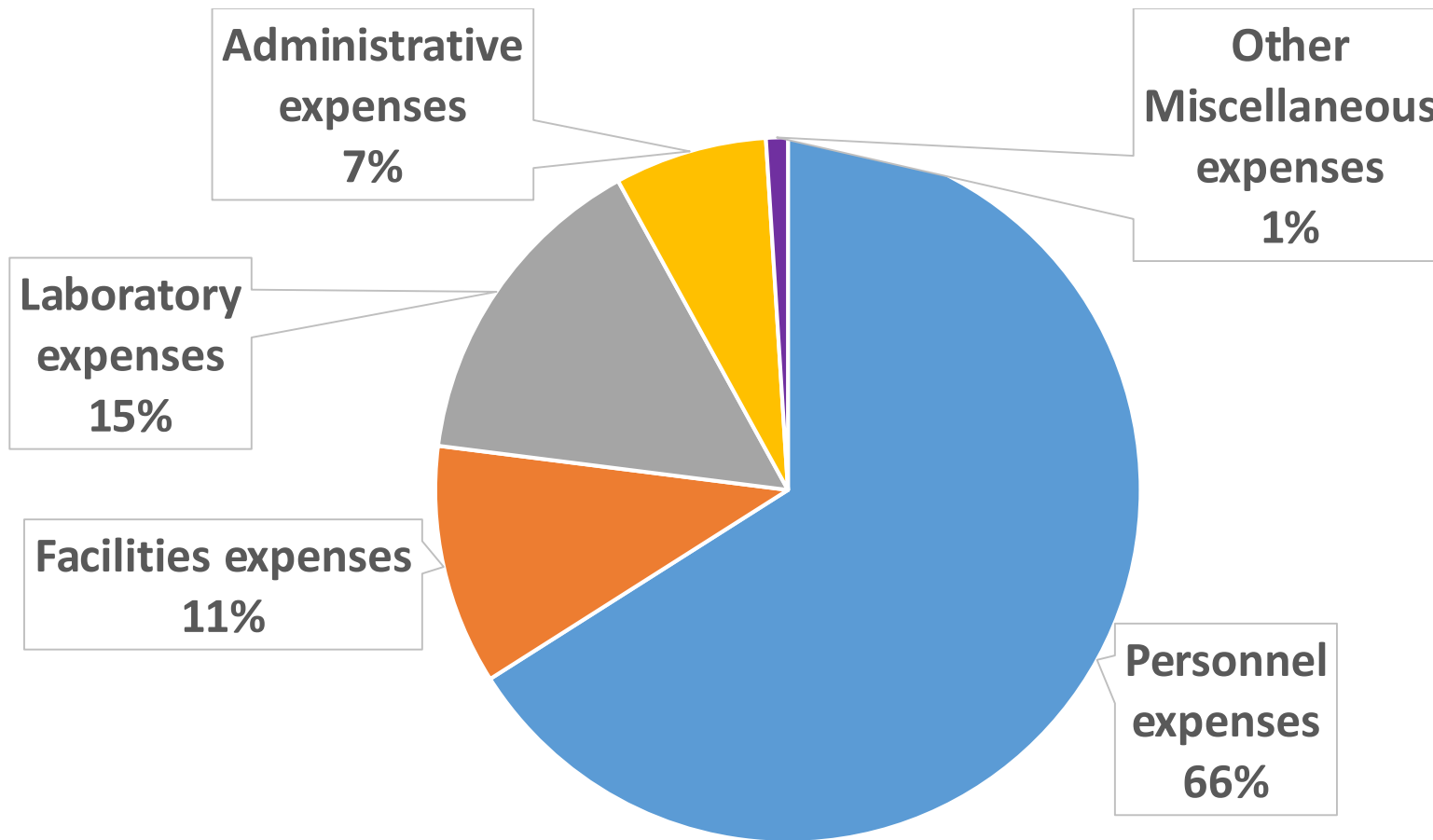


Budget and Resources



Biennial FY22 Budget

Service Areas	General Fund (FY22)	Federal Funds (FY22)	ARPA (FY22)	Total (FY22)	% of overall budget
Forensic Biology	\$ 12,281,935	\$ 1,758,391		\$ 14,040,326	25%
Chemistry	\$ 14,424,012	\$ 38,000		\$ 14,462,012	26%
Toxicology	\$ 8,615,582	\$ 565,551		\$ 9,181,133	16%
Physical Evidence	\$ 9,633,931	\$ 54,600	\$ 505,375	\$ 10,193,906	18%
Forensic Training	\$ 366,856	\$ 17,550		\$ 384,406	1%
Administration/Facilities/IT	\$ 8,003,338	\$ 4,838		\$ 8,008,176	14%
Grand Total	\$ 53,325,654	\$ 2,438,930	\$ 505,375	\$ 56,269,959	100%



DFS Agency Budget – FY22

- By Expense Category

Governor's Introduced Budget (FY23-FY24)



Fund toxicology forensic scientist positions and equipment

Provides general fund support for five forensic scientist positions and associated equipment and supplies for the toxicology section to help address increases in caseload and backlogs.

	FY 2023	FY 2024
General Fund	\$1,535,400	\$728,500
Positions	5.00	5.00

Governor's Introduced Budget (FY23-FY24)



Fund additional toxicology positions and supplies for tetrahydrocannabinol (THC) data collection initiative

Adds funding for four toxicologist positions and associated equipment and supplies. These positions will address caseload increases in this section and perform testing for the presence of THC in blood samples collected in impaired driving cases.

	FY 2023	FY 2024
General Fund	\$641,200	\$641,200
Positions	4.00	4.00

Governor's Introduced Budget (FY23-FY24)



Increase nongeneral fund appropriation and maximum employment level

Provides additional federal fund appropriation and nongeneral fund-supported positions to accommodate grants awarded by the federal government.

	FY 2023	FY 2024
Nongeneral Fund	\$200,000	\$200,000
Positions	10.00	10.00

Governor's Introduced Budget (FY23-FY24)



Provide support for forensic trainer position

Funds a position to teach at the agency's Forensic Science Academy. The academy trains law enforcement officers in forensic evidence documentation and recovery.

	FY 2023	FY 2024
General Fund	\$106,560	\$106,560
Positions	1.00	1.00



Grant Awards Received

FY 2021 DNA Capacity Enhancement and Backlog Reduction (CEBR) Grant

DFS has been awarded funds from the Bureau of Justice Assistance (BJA) under this program to increase/maintain capacity in the Forensic Biology and the DNA Data Bank Sections by continuing to fund personnel, purchase supplies, and add items of equipment. Funds will also be used to provide the required continuing education for DNA scientists.

Total funds requested and awarded: Federal = \$1,743,265



Grant Awards Pending

FY 2021 Paul Coverdell Forensic Science Improvement Grant

DCJS has been notified of the award from BJA; however, the subawards for DFS and the OCME have not been announced.

DCJS applied for these funds on behalf of DFS and the OCME. DFS will utilize funds to provide continuing education to scientific staff in the various disciplines. DFS also plans to use funds to contract with the LIMS provider (TCSC) to increase capabilities of the LIMS to allow for a paperless, electronic review process for the generation of reports.

Total funds requested: \$508,328

DFS Portion = \$254,164



MJ Field Test Grant Award Pending – Full Board Approval Needed

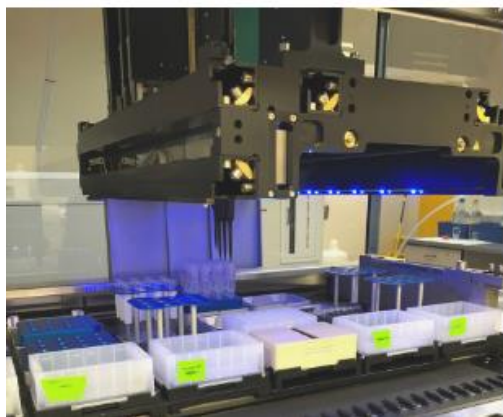
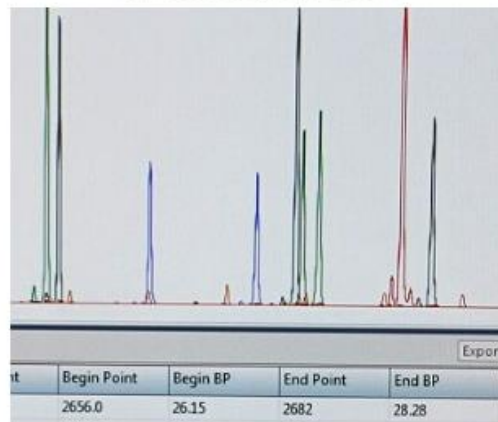
2021-NIST-MSE-01: Measurement Science and Engineering Research Grants Programs National Institute of Standards and Technology (NIST), United States Department of Commerce

The FS Board Chair and Vice Chair have approved the Department accepting the grant funds, if awarded.

The Florida International University (FIU) Global Forensic and Justice Center has applied for this grant to conduct an operational test and evaluation of the TRU Device that is advertised to produce rapid reliable results in differentiating between hemp and marijuana flower in austere environments including roadside stops, crime scenes, and evidence intake. The grant will be a collaborative effort between FIU, Purdue University Northwest, and DFS.

DFS would be a subrecipient under the grant, and would evaluate and validate the THC Recognition Unit (TRU) rapid test device to assess its potential for use by law enforcement in the field as to whether a sample is more likely to be marijuana or industrial hemp. DFS would use the grant funds to hire a part-time researcher/intern within the Chemistry Program Area to conduct experiments with known samples on the TRU device. The experiments will be designed to demonstrate the accuracy, robustness, and ease of use of the device.

Total amount proposed for DFS is \$76,304, which includes a part-time researcher, materials and supplies, and indirect costs. The potential timeframe for the award period is January 1, 2022 through June 30, 2023.



Thank you!